

What is Claimed is:

1. A method for forming a transistor of a semiconductor device, comprising the steps of:

5 forming a gate electrode on a semiconductor substrate;

ion-implanting impurities into the semiconductor substrate using the gate electrode as a mask to form a source/drain junction region by;

10 forming an oxide film on the resulting structure at a temperature below 700°C; and

forming a nitride film spacer on a sidewall of the gate electrode.

15 2. The method according to claim 1, wherein the step of ion-implanting impurities comprises ion-implanting ^{31}P at an energy ranging from 10 to 35KeV and at a dose ranging from $1.0\text{E}12$ to $5.0\text{E}13$ ions/cm².

20 3. The method according to claim 1, wherein the step of ion-implanting process impurities comprises ion-implanting ^{75}As at an energy ranging from 15 to 70KeV and at a dose ranging from $1.0\text{E}12$ to $5.0\text{E}13$ ions/cm².

4. The method according to claim 1, wherein the ion-implanting process is performed using a single-type equipment without wafer tilt and rotation.

5 5. The method according to claim 1, wherein the ion-implanting process is performed with a tilt of 1° and in a bi-rotation or a quadruple-rotation configuration using a single-type equipment.

10 6. The method according to claim 1, wherein the step of forming an oxide film is a CVD or a PVD process.

7. The method according to claim 1, wherein the step of forming an oxide film comprises depositing the
15 oxide film via a CVD or a PVD process performed at a temperature below 600°C , and performing thermal treatment of the semiconductor substrate at a temperature ranging from 600 to 700°C under a nitrogen gas atmosphere.

20 8. The method according to claim 7, wherein the thermal treatment is a rapid thermal treatment performed for 1 to 5 minutes or a thermal treatment performed in a furnace for a time period ranging from 1 minutes to 6 hours.

9. The method according to claim 7, wherein the thermal treatment is in a furnace for 1 minutes to 6 hours.